DOCUMENT RESUME

ED 295 332 EA 020 103

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TITLE Male/Female Salary Disparity for Professors of Educational Administration.
PUB DATE Apr 88
NOTE 41p.; Paper presented at the Annual Meeting of the American Educational Research Association (New Orleans, LA, April 5-9, 1988).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Compensation (Remuneration); *Educational Administration; Higher Education; *Salary Wage Differentials; *Sex Discrimination; *Women Faculty

ABSTRACT

The earnings gap between male and female workers across all occupational groups has been well documented; full-time women workers earn, on average, approximately 65 percent of men's salaries. Although male/female salary disparity is largest across occupational groups, salary disparity within occupational groups still prevails. For example, the salaries of women professors are estimated at about 88 percent of male professors' salaries. A recent study of the educational administration professoriate indicated that women faculty earn, on average, about $10,000 less than their male colleagues. Even when controlling for rank, women faculty still earn about $5,000 less than men faculty. Although these data suggest possible gender bias in compensation, descriptive statistics do not adequately verify wage and salary discrimination. This study explores the problem of a male/female salary differential for professors by discussing relevant factors that may explain this disparity and by applying a model for detecting compensation bias to a sample of educational administration professors' salaries. Aside from simple descriptive statistics and bivariate correlations, data were analyzed using two multiple regression techniques. Results indicate that a small but statistically significant proportion of the salary variance (beyond that of other compensable factors) is explained by gender. Varying market conditions, individual negotiating skills, and past experience may account for some salary disparities. Implications are briefly discussed. Included are several tables, 3 endnotes, and a bibliograpy of 31 references. (MLH)

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MALE/FEMALE SALARY DISPARITY FOR PROFESSORS OF EDUCATIONAL ADMINISTRATION

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Acknowledgement: Data for this studied represent a subset of a larger body of data collected by McCarthy, Kuh, Newell, & Iacona (1988) for the University Council on Educational Administration study of the professorship in educational administration. The author wishes to express special appreciation to Martha McCarthy, George Kuh, and UCEA for their cooperation in sharing this data, and to Jack Matkin for expediting the logistics of the data transfer.

A paper presented at the American Educational Research Association Conference, April, 1988, New Orleans, LA.

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ABSTRACT

A recent study of the professoriate in educational administration indicated that women faculty earn, on average, approximately $10,000 less than their male colleagues. Further, even when controlling for rank, women faculty still earn approximately $5000 less than men faculty (McCarthy, et al, 1988). Although these data would suggest possible gender bias in compensation, descriptive statistics are not adequate verification of wage and salary discrimination. Therefore, the purpose of this study was to explore the problem of a male/female salary differential for professors by discussing relevant factors that may explain this salary disparity and applying a model for detecting bias in compensation to a sample of educational administration professors' salaries. Results of the study indicate that a small, but statistically significant, proportion of the salary variance (beyond that of other compensable factors) is explained by gender.

INTRODUCTION

Equity issues in employment have had considerable impact on personnel administration functions such as recruitment, selection, promotion, and compensation. Since the early 1960's, there has been a proliferation of equity legislation and regulation (see Endnote 1). Concurrently, the female labor participation rate has increased substantially (see Endnote 2). Among those personnel processes affected by these legislative and labor force changes is employee compensation--- and of specific concern is the issue of an earnings gap between male and female workers.

Although the topic of comparable worth (equal pay for work of comparable value) is still quite controversial and operationally unwieldy, the standard of equal pay for equal work has been legislated since 1963 in the Equal Pay Act. It is this standard that is used to litigate cases of salary inequity between male and female workers. However, verifying salary discrimination has proven to be a complex and cumbersome task, often yielding inconclusive results. In spite of these difficulties, litigation continues (LaNoue & Lee, 1987, p.20-23), often at a great expense to employing organizations as well as to employees.

The purpose of this paper is to explore the problem

of a male/female salary differential for a particular occupational group --- professors of educational administration. The paper discusses relevant factors that might explain this salary disparity and applies a model for detecting bias in compensation to a sample of educational administration professors' salaries.

FACTORS TO EXPLAIN A MALE/FEMALE SALARY DIFFERENTIAL

The earnings gap between male and female workers across all occupational groups has been well-documented, with recent reports suggesting that full-time women workers earn, on average, approximately 65% of men (U.S. Dept. of Commerce, 1985). Although male/female salary disparity is largest across occupational groups, there is still some evidence of salary disparity within occupational groups. For instance, within the professoriate, the academic year salaries of women professors are estimated to be approximately 88% that of men, with the average salaries of women at every rank, discipline, and type of institution consistently less than the average salaries of their male counterparts (American Association of University Professors, 1987). A recent study of the professoriate in educational administration indicated that women faculty earn, on average, approximately $10,000 less per year than men

faculty, and that even when controlling for rank, women still earn approximately $5000 less per year than their male counterparts, or about 86% of men's salaries (McCarthy, Kuh, Newell, & Iacona, 1988). Although the male/female salary disparity reflected in these figures suggests potential gender bias, descriptive statistics do not provide sufficient evidence of discrimination in compensation.

The general model for determining wage and salary discrimination is to estimate the portion of the salary differential attributable to relevant work, organizational, and market factors, and infer that the remaining portion of the differential is due to discrimination in compensation (Milkovich, 1981). Studies using this model have suggested that the portion of the wage differential attributable to gender discrimination varies substantially depending on the samples, methods, and data sources used (Kahne & Kohen, 1975; Pezzullo & Brittingham, 1979; Pounder, 1988; Sawhill, 1973; Stone, 1985). In studies of this type, it is important to identify and control as many relevant compensable factors as possible so that the residual attributed to gender is not inappropriately inflated, weakening the validity of the study results.

The work, organizational, and market factors

generally recommended for inclusion in the model are:

1) differences in work-related prerequisites & co-requisites (e.g. education, training, experience);
(2) differences in employee work behaviors (e.g. performance, productivity, absenteeism);
(3) differences in work content and work responsibilities;
(4) differences in employing organizations and industries;
(5) differences in union membership and union characteristics;
(6) differences in labor market conditions and regions (Milkovich, 1981).

The first four of these factors seem to be the most relevant to a discussion of a male/female salary disparity among professors. There is no evidence to suggest that women are more inclined to be found among union than non-union faculty, nor that women faculty are distributed in substantial disproportion across different labor market conditions and regions (see Endnote 3). Therefore, the following discussion will focus on each of the four factors listed above.

Work-Related Differences in Males and Females

One typical explanation for a male/female salary

differential is that gender may covary with certain work-related factors such as educational level and job experience. These differences are attributed largely to women's relatively recent entry into the labor force in large numbers. Although this explanation may explain differences in men's and women's salaries across many occupational groups, these factors must be considered with respect to the occupational group of professors --- and in particular, professors of educational administration.

Educational differences between male and female professors are unlikely to account for a salary differential. Most colleges and universities require faculty to hold a doctoral degree (Ph.D., Ed.D., or J.D.), at least at the assistant professor rank or higher. This job qualification would necessarily reduce salary variability due to educational level among higher education faculty. Among educational administration professors, it would be very unusual to find any faculty who did not have a doctoral degree due to the fact that they typically teach in graduate level programs.

However, male and female differences related to experience may explain some of the salary disparity. For a variety of reasons, women have entered the professoriate more recently than men and often do not

have as many years of experience or as high a faculty rank or tenure status as their male counterparts (Etaugh, 1984). Of course, it can be argued that this difference itself may be a result of current or past gender discrimination in hiring and promotion practices (Fidell, 1975; Geis, Carter, & Butler, 1982; Kritek, 1984; Nieva, & Gutek, 1980; Sandler, 1986). Among professors of educational administration (approximately 12% of whom are female), about two thirds of the men and only about one fifth of the women are full professors; whereas, less than 9% of the men and 37% of the women are assistant professors. Also, about 84% of the men are tenured compared to about 50% of the women (McCarthy, et al, 1988). These experience and job status factors, due to their covariance with gender, may well explain some of the male/female salary differential.

Another experience-related factor that may be applicable to professors of educational administration is past administrative work experience. Although, it is increasingly less common for beginning professors to have worked as practicing administrators (McCarthy, et al, 1988), those who have had such experience (especially former school superintendents or other high-ranking school officials) may command higher

salaries than other beginning professors in some institutions. Due to the underrepresentation of women in school administration overall, as well as to their marked underrepresentation in certain higher-paying line administrative positions (e.g. the secondary principalship and superintendency), women faculty may not have the same administrative experience profiles as men faculty on entering the professorship (Pounder, 1988). To the degree that faculty salary is related to past administrative experience (not to mention the past salary associated with those positions), women may receive less compensation on entering the professoriate.

Differences in Work Behaviors

The work behaviors or performance requirements typically emphasized in the professorship are research productivity, teaching, and service. There is some evidence to suggest that female professors exhibit less research productivity than their male counterparts (Braxton & Bayer, 1986; Finkelstein, 1984; Lipset & Ladd, 1971), although the gap in male/female publication productivity has narrowed since the 1940's and is least evident in the early career stage (Cole & Zuckerman, 1987). Other studies have shown that when disciplinary and institutional differences are controlled, there are no significant differences in research productivity of

male and female faculty (Ferber, 1974; Ferber & Kordick, 1978; Katz, 1973; Simon, Clark, & Galway, 1975). Among professors of educational administration, the evidence regarding research productivity is similarly inconclusive. A survey of professors of educational administration indicated that the average number of articles written during the past five years was somewhat higher for women (x=10) than men (x=9), but the modal number of articles written during this same period was higher for men than for women (McCarthy, et al, 1988). Also, women in educational administration were more research-oriented and spent more time on research activities than their male counterparts (McCarthy, et al, 1988). These data and research evidence are also confounded by other study results suggesting that there may be gender discrimination in evaluating articles for publication (Goldberg, 1968; Paludi & Bauer, 1983; Paludi & Strayer, 1985). Although the process of blind review should reduce (if not eliminate) the liklihood of gender discrimination in publication decisions, it is impossible to be sure of these effects on the research productivity records and consequent salaries of female faculty.

Teaching performance is another work behavior that can influence salary variability (although some would

argue that research institutions are only minimally concerned with teaching performance). Teaching performance may be assessed both in terms of courseload and quality of teaching evaluations. Some have suggested that women faculty members are assigned heavier courseloads of introductory classes than their male counterparts (Menges & Exum, 1983, as cited by Sandler, 1987, p.15). This practice may have implications for the research productivity of women faculty, as well as for lower "instructional status" relative to males teaching upper division courses, but it is difficult to predict its direct effects on salary disparity, if any. Among professors of educational administration, women faculty teach, on average, one more hour per term than do their male counterparts, and women devote slightly more time to undergraduate instruction than do men (McCarthy, et al, 1988).

Some studies of faculty teaching evaluation have suggested that women may be rated lower than men (see, for example, Thielens, Jr., 1984). However, this writer could find no evidence on the quality of teaching performance among professors of educational administration. It is assumed that quality of teaching performance may be randomly distributed across male and female faculty members, with little implication for

salary disparity.

The service dimension of the faculty role may reflect behaviors and involvement in a variety of activities. These include such activities as student advisement and research supervision, faculty committee work and governance activities, attendance at professional meetings, editing responsibilities for professional journals, and field activities including consulting and guest lecturing. Sandler (1986, p.4) suggested that women faculty often have heavier advisement loads than their male counterparts because increasing numbers of female students may seek female mentors among the relatively small number of women faculty available. Furthermore, women faculty may do more faculty committee work due to efforts to ensure female representation on these committees. These same trends are only partially borne out among professors of educational administration. Women faculty members tend to chair fewer doctoral committees than their male counterparts, although they spend more time in university committee work than do men (McCarthy, et al, 1988). Analysis of survey reponses from professors of educational administration indicate that with the exception of guest lecturing, there are no significant differences between males and females in the time spent

on other service activites (McCarthy, et al, 1988).

Overall, much of the evidence on differences between male and female faculty in research productivity, teaching, and service behaviors is quite muddled, if not contradictory. In fact, there is no clear indication that there is a marked difference between male and female faculty on these three major types of professorial work behaviors. If any of these three behaviors might have a significant effect on salary variability, it is more likely to be research productivity ---especially at research institutions where scholarly productivity is often weighted more heavily in personnel decisions than is teaching or service.

Differences in Work Content and Work Responsibilities

The primary difference between the work content and work responsibilities of male and female faculty members (other than those related to research, teaching, and service discussed above) may be in terms of administrative responsibilities. At this point in time, it is uncommon for women to be department chairs or academic deans, and women who do assume administrative roles often find themselves serving in lower-status positions, support positions, or "associate" or "assistant-to" positions (Etaugh, 1984). McCarthy et al

(1988) reported that 38% of educational administration faculty hold some sort of administrative role in addition to their professorial role, but no figures were provided regarding gender breakdown. However, because women in educational administration are more prevalent in the lower ranks (McCarthy, et al, 1988), and because gender discrimination tends to be more prevalent in fields and disciplines that have traditionally been dominated by men (Sandler, 1986, p. 16), it is expected that relatively fewer women than men in educational administration have administrative roles and responsibilities.

Differences in Employing Organizations

A number of organizational factors may influence faculty salary variability including institution type (e.g. research, doctorate-granting, comprehensive, or other), affiliation (e.g. pubic, private, or church-related), size, and institutional wealth. As a general rule, research and doctorate-granting institutions pay more than other institutions; private institutions (especially at research, doctorate-granting, and comprehensive institutions) tend to pay more than public, with church-related paying least (American Association of University Professors, 1986; Tolbert, 1986). Research by Tolbert (1986) also indicates that

male/female salary disparity is greater at larger institutions, more selective institutions, wealthier institutions, private institutions, institutions with smaller proportions of females, and institutions where women are more segregated at the lower ranks. Further, the relatively larger male/female salary disparity due to these variables tends to persist even when rank is taken into account (Tolbert, 1986). These trends are also suggested by data on the salaries of educational administration faculty, with the average academic year salaries of professors at research and doctorate-granting institutions about $5000 higher than the average academic year salaries of their counterparts at comprehensive universities (McCarthy, et al, 1988, p. 19). However, there was no evidence to suggest that women faculty in educational administration are distributed disproportionately across different institution types (McCarthy, et al, 1988).

Another variable analogous to "organizational differences" is differences in academic disciplines. These differences are often a reflection of market comparability with professions and industries outside of academia. Salaries of professors may vary substantially depending on the academic discipline in which they work (see Table III in American Association of University

Professors, 1986). Although education professors tend to earn, on average, approximately $5000 less than the mean faculty salary across ranks and disciplines (American Association of University Professors, 1987), the average faculty salary in educational administration compares favorably (McCarthy, et al, 1988, p. 19). However, it is a matter of speculation whether there is any type of salary differential due to area of specialization within disciplines. If compensation is somehow related to content specialization, there may be some implications for a male/female salary differential in that women faculty in educational administration are more likely to specialize in areas such as organizational theory than in finance or economics (McCarthy, et al, 1988, p. 19).

It is difficult to ascertain the combined effects of these various and complex factors on salary disparity between men and women professors of educational administration. However, it is hypothesized that experience and job status (rank and tenure), past administrative experience, and current administrative responsibilities may most adequately explain the salary differential between male and female professors of educational administration due to the fact that these are the factors that are most likely to covary with

gender. Any additional salary variability not accounted for by these (as well as other) factors would be attributed to gender bias in compensation.

METHODOLOGY

Data for this study were a subset of a larger body of data collected by McCarthy, et al (1988) in their study of the educational administration professoriate (see McCarthy, et al monograph for full details of data collection methods, instrumentation, design, etc.). McCarthy et al surveyed the full population of professors who worked in graduate programs of educational administration (N=3087 at 372 institutions). Their response rate was approximately 56% (n=1307).

Respondents

The specific data used for analysis in this study were responses from educational administration assistant and associate professors only. (Full professors were not included due to the marked scarcity of women at this rank.) The sample size (total n=488) consisted of 135 (27.7%) assistant professors and 353 (72.3%) associate professors, with 227 (46.5%) respondents nontenured and 261 (53.5%) respondents tenured. These professors included 94 women (19.3%) and 392 men (80.3%), which is a somewhat higher proportion of women than is

represented among the total educational administration professoriate. Slightly over 10% of the respondents were minority faculty --- most of whom were males.

Years of experience as a professor ranged from one year to 32 years, with a mean of 10 years (s.d.=6.4 years). Most respondents (62.7%) held no other administrative appointment in conjunction with their professorial role, although some (37.3%) had some type of additional administrative responsibility ---including "other" administrative role (22.1%), department chair (10.5%), assistant or associate dean (3.9%), or dean (0.8%). There was a reasonable balance of professors from different types of institutions with 35.7% (n=174) of respondents at research institutions, 21.5% (n=105) of respondents at doctorate-granting institutions, and 42.8% (n=209) of respondents at all "other" institutions. (Institution type was categorized by McCarthy et al [1988] according to the Carnegie classification system.)

Variables Extracted from Survey Instrument

The variables extracted from McCarthy et al's (1988) survey instrument included:

1) academic rank (associate or assistant professor);
2) tenure status (tenured or nontenured);
3) years of experience as a professor (present age

minus age began professorship);

4) administrative appointment (dean, assistant or associate dean, department chair, "other", or none);

5) type of institution (research, doctorate-granting, or other);

6) two different teaching measures-

   a) teaching load (standardized by semester), &

   b) percent of time spent teaching and advising students;

8) two different service measures-

   a) percent of time spent in service activities, &

   b) the sum of the number of days per month spent in various service activites (i.e. consulting, attending professional meetings, guest lecturing, & editing journals);

9) three different research productivity measures-

   a) percent of time spent in research and writing,

   b) number of books written or edited, and

   d) number of articles, monographs, book chapters, etc. written in the past five years;

10) gender (male or female);

& 11) current academic year salary (collected in categorical intervals of $5,000, ranging from "$55,000 or more" down to "$20,000 or less").

Although using a pre-existing data set has some limitations, most variables that are relevant to a study of discrimination in professor's salaries were available. One relevant variable that was not available for inclusion in the model was a record of past administrative experience. This variable may have had some implications for salary variability because candidates with certain types of past administrative experience (e.g. superintendent) may be able to negotiate higher entry level salaries due to relatively higher salaries in their past administrative role. There was also no measure of teaching effectiveness. However, it is very difficult to obtain a common measure of teaching performance across different institutions. Also, one of the measures of research productivity seemed to have some measurement error, probably due to misinterpretation of the survey question. The range of responses for this item on the number of articles written "in the past five years" (0-99) suggests that some respondents may have indicated their total number of articles written, rather than those written in the past five years only. It was impossible to tell which professors based their responses on the past five years of publications versus which based their responses on an entire career of publications. As a result, the

correlation of this variable with other related variables may have been weakened due to measurement error.

Analysis

Aside from simple descriptive statistics and bivariate correlations, data were analyzed using two different multiple regression techniques. The first regression analysis was a simple forward regression in which the criterion measure, academic year salary (#11 above), was regressed on all predictor measures listed above (#'s 1-10). A second regression analysis was used specifically to detect gender bias in compensation. In this regression analysis, salary was regressed on "clusters" of predictor variables which represented the four major factors which may account for a salary differential between male and female professors (see earlier discussion). As each cluster is entered, an incremental F-test is done to determine if the introduction of this cluster (or variable) explains a significant portion of additional variance in salaries. Gender is added last into the model to be sure that no variance that could be explained by other job-relevant compensable factors is inappropriately attributed to gender. This regression using variable clusters as predictors (or "predictive factors") was used for three

reasons: 1) to offer an analysis of data that better reflected the conceptual framework of the study; 2) to minimize the problem of multicollinearity of variables which were statistically as well as conceptually related to one another; and 3) to be sure that variance due to factors that may covary with gender was not inappropriately attributed to gender. The order that variable clusters were entered into the model was based on the strength of the correlation between conceptually related predictor variables and salary (see Table 1).

[INSERT TABLE 1 ABOUT HERE]

Parallel analyses were also done using assistant professors' responses only. The reasons for these separate analyses were two-fold. First, there were proportionately more women at the assistant professor rank; 35.1% of assistant professors were female, but only 13.1% of associate professors were female. Second, by holding rank constant for assistant professors, the measurement problem of the research productivity variable, "number of articles written in the past five years", might be minimized because regardless of respondents' interpretation of this item, the total career publication record of assistant professors would be largely the same as their publication record of the past five years.

RESULTS

Assistant and Associate Professors

Descriptive statistics of the salaries of male and female assistant and associate professors (see Table 2A) indicated that more respondents (27.1%) indicated earnings of $30,000 to $34,999 per academic year than any other single $5,000 incremental category. Further, the percentage of males (27.8%) and females (24.5%) in this earnings bracket was fairly equivalent. However, the data indicated that 58.5% of the women earned less than $30,000, while only 17.1% of the women earned $35,000 or more. By contrast, only 23.9% of the men earned less than $30,000, but 38.3% of the men earned $35,000 or more. As suggested earlier, however, descriptive statistics are not sufficient evidence of gender discrimination in compensation due to the influence of other compensable factors which may covary with gender.

[INSERT TABLE 2A ABOUT HERE]

However, inferential statistical analysis of salary data also suggested gender bias in compensation. The first regression analysis (see Table 3A) entered six variables (in the following order) as significant predictors ($p < .01$) of salary: 1) administrative appointment; 2) academic rank; 3) type of institution;

4) gender (males coded `1', females coded `0'); 5) percent of time spent teaching and advising students; and 6) tenure status. All predictor variables correlated positively with salary except "percent of time teaching and advising students", which was inversely related to salary. That is, higher salaries were earned by 1) faculty with administrative appointments (as well as higher level administrative appointments); 2) associate professors; 3) faculty at research institutions versus doctorate-granting institutions versus "other" institutions; 4) males; 5) faculty who spend **less** time teaching and advising students; and 6) tenured faculty.

[INSERT TABLE 3A ABOUT HERE]

In the second regression analysis (see Table 4A), the following "clusters" of relevant predictors of academic salary were entered in the following order:

1) work-related prerequisites and co-requisites (i.e. academic rank, tenure status, and years of experience as a professor);
2) work content and work responsibilities (i.e. administrative appointment);
3) type of institution;
4a-c) work behaviors--
   4a) teaching (2 measures);

4b) service (3 measures);

4c) research productivity (3 measures);

& 5) gender.

Results indicated that all variable clusters were statistically significant ($p < .01$) in explaining an additional proportion of the variance in salary except the work behavior factors---teaching, service, and research. The experience and job status cluster explained the largest portion of variance (7.1%), administrative appointment explained an additional 4%, institution type explained an additional 1.5%, and gender explained an additional 2.5% of the variance in salaries of assistant and associate professors of educational administration. A total of 30.1% of the variance in academic year salaries was explained by this "cluster" model of regression analysis.

[INSERT TABLE 4A ABOUT HERE]

Assistant Professors Only

Descriptive statistics of the salaries of male and female assistant professors (see Table 2B) indicated that more respondents (36.1%) indicated earnings of $25,000 to $29,999 per academic year than any other single $5,000 incremental category. However, the proportion of males and females in this category were dramatically different from one another; 50% of the

females, but only 28.2% of the males were in this earnings category. Also, 31.3% of the females earned less than $25,000, while only 16.7% of the females earned $30,000 to $39,999. Among males, 18.8% earned less than $25,000, while 41.1% earned $30,000 to $39,999. An additional 11.9% of men earned $40,000 or more, but only 2.1% of women reported earnings in this category.

[INSERT TABLE 2B ABOUT HERE]

The first regression analysis (see Table 3B) entered three variables (in the following order) as significant predictors ($p < .01$) of salary: 1) years of experience as a professor; 2) teaching load; and 3) gender (males coded '1', females coded '0'). Experience and gender correlated positively with salary, but teaching load was inversely related to salary. That is, higher salaries were earned by: 1) assistant professors with more time in rank; 2) assistant professors with lighter teaching loads; and 3) males.

[INSERT TABLE 3B ABOUT HERE]

In the second regression analysis (see Table 4B), the same "clusters" of predictor variables were entered in the same order as previously done with the sample of assistant and associate professors. However, the only factor that was statistically significant ($p < .01$) in

explaining an additional proportion of salary variance was gender. Gender explained approximately 4.1% additional variance in salary beyond that explained by all other compensable factors. A total of approximately 23% of variance in the salaries of assistant professors was explained by this "cluster" model of regression analysis.

[INSERT TABLE 4B ABOUT HERE]

DISCUSSION AND CONCLUSIONS

Results of this study suggest that gender discrimination in compensation among professors of educational administration does exist. Although gender explained only a small proportion of variance in salaries beyond that of other compensable factors, the added variance was statistically significant.

Among assistant and associate professors, it is not surprising that variables related to experience and job status explained the largest proportion of variance (7.1%) in salary. Similarly, administrative appointment explained the next largest proportion of added variance (4%). In spite of the fact that gender tends to covary with these two factors or clusters of variables, an additional 2.5% of unique variance was attributable to gender. The proportion of salary variance attributable

to type of institution was also statistically significant, although quite small (1.5%). It was surprising that the work behavior variables were not significant in predicting salary. However, perhaps because some of the work behavior variables (especially those related to teaching) tend to covary with institution type as well as administrative appointment, the proportion of variance attributable to the three work behavior clusters was reduced by the contribution of these previously entered variables in the model.

Among assistant professors, the cluster of experience and job status variables, as well as administrative appointment, did not explain a significant proportion of variance in salaries. This is probably due to the restriction of range in these variable clusters caused by holding rank constant at the assistant professor level. However, when entered individually in the forward regression, years of experience as a professor (or, in other words, time in rank) was a significant predictor of salary. In the "cluster" regression analysis, gender was the only factor that explained a statistically significant proportion of additional salary variability (4.1%) beyond that explained by all other compensable factors. This study's data analysis suggests that perhaps gender

is a more important factor in influencing the salaries of assistant professors than the salaries of professors at other ranks.

In spite of these results, it is important to bear in mind that the total proportion of variance explained among both professor groups was somewhat small --- approximately 30% for assistant and associate professors combined, and approximately 23% for assistant professors only. Some of this salary variability may be explained by geographic region or location, a variable that was not included in this study's analysis. Addition of this variable to the regression analysis may boost the proportion of explained variance. However, it is unlikely that inclusion of this variable would have much effect on the contribution of gender to salary variability because geographic location and gender do not tend to covary.

Another variable that may explain additional salary variability --- and perhaps reduce the proportion of unique variance explained by gender --- is past administrative experience. Because women are underrepresented among educational administrators, especially in the higher paying administrative positions, they may be at a slight disadvantage in negotiating entry level salaries as beginning assistant

professors. It is difficult to say to what degree this variable may influence salary. Its effect may be small (especially in research institutions) because increasingly more beginning professors are entering the professorship with a research background rather than a practitioner background (McCarthy, et al, 1988).

It appears that the influence of other factors such as varying market conditions and individual negotiating power or skill may be contributing to the unexplained portion of salary variability among professors of educational administration. In spite of the salary variance that is not attributable to typical compensable factors, there is little doubt that some of the existing male/female salary disparity can be explained as gender discrimination. This small, but statistically significant proportion of salary variability due to gender may mean several hundred to several thousands of dollars each year to female employees. If this salary disparity persists within the profession, the perception of inequity created may result in increasing dissatisfaction among female professors.

Further, verification of salary disparity due to gender poses the threat of discrimination litigation for colleges and universities. This litigation carries significant costs for institutions and employees ---both

economically and psychically. As increasingly more women move into the professorship in educational administration, perhaps the male/female salary disparity will be reduced. Until then, universities and departments of educational administration have a legal and moral responsibility to uphold the legislated standard of equal pay for equal work.

ENDNOTES

1. These include Equal Pay Act of 1963, Title VII of the 1964 Civil Rights Act, Executive Order 11375 of 1968, Equal Employment Opportunity Act of 1972, Women's Educational Equity Act of 1974, Comprehensive Employment and Training Act of 1978, and Age Discrimination Employment Act Amendment of 1978.

2. The female labor force participation rate rose from 28% in 1947 to 52% in 1982 (U.S. Department of Labor, Bureau of Labor Statistics, 1982).

3. For a breakdown of professors of educational administration in different geographic regions by gender, see Table 7-6 of McCarthy, et al (1988) monograph.

BIBLIOGRAPHY

American Association of University Professors (1987). The annual report on the economic status of the profession 1986-87. Academe, 73(2), 3-79.

Braxton, J.M. & Bayer, A.E. (1986). Assessing faculty research performance. New Directions for Institutional Research, No. 50, 13(2), 25-42.

Cole, J.R. & Zuckerman, H. (1987). Marriage, motherhood, and research performance in science. Scientific American, 256(2), 119-25.

Etaugh, C. (1984). Women faculty and administrators in higher education: Changes in their status since 1972. Journal of the National Association for Women Deans, Administrators and Counselors, Fall issue, 21-25.

Ferber, M. (1974). Professors, performance, and rewards. Industrial Relations,13, 69-77.

Ferber, M. & Kordick, B. (1978). Sex differential in the earnings of Ph.D.'s. Industrial & Labor Relations Review, 31, 227-38.

Fidell, L.S. (1975). Empirical verification of sex discrimination in hiring practices in psychology. In R.K. Unger & F.L. Denmark (Eds.), Woman: Dependent or Independent Variable. NY: Psychological Dimensions.

Finkelstein, M.J. (1984). The status of academic women: An assessment of five competing explanations. The Review of Higher Education,7(3).

Geis, M.R., Carter, & Butler, D.J. (1982). Research on Seeing and Evaluating People. Newark, DE: Office of Women's Affairs, University of Delaware.

Goldberg, P. (1968). Are women prejudiced against women? Trans-Action,5,28-30.

Kahne, H. & Kohen, A.I. (1975). Economic perspective on the role of women in the American economy. Journal of Economic Literature, 13, 1249-74.

Katz, D. (1973). Faculty salaries, promotions, and productivity at a large university. American Economic Review, 63, 469-77.

Kritek, P. (1984). Women's work and academic sexism. Educational Record, 65(3), 56-7.

Lipset, S.M. & Ladd, E.C., Jr. (1971). The divided professoriate. Change, 3(3), 54-60.

LaNoue, G.R. & Lee, B.A. (1987). Academics in Court: The Consequences of Faculty Discrimination Litigation. Ann Arbor, MI: University of Michigan Press.

McCarthy, M. , Kuh, G., Newell, L.J., Iacona, C. (1988). Under Scutiny: The Educational Administration Professoriate. Tempe, AZ: University Council on Educational Administration.

Menges, R.J. & Exum, W.H. Barriers to the advancement of women and minority faculty. Journal of Higher Education, 54(2), 127.

Milkovich, G. T. (1981). The emerging debate. In E.R. Livernash (Ed.), Comparable Worth: Issues and Alternatives (pp.25-47). Washington, DCd: Equal Employment Advisory Council.

Nieva, V.F. & Gutek, B. (1980). Sex effects of evaluation. The Academy of Management Review, 5(2), 267-76.

Paludi, M.A. & Bauer, W.D. (1983). Goldberg revisited: What's in an author's name? Sex Roles, 9(3), 387-90.

Paludi, M.A. & Strayer, L.A. (1985). What's in an author's name? Differential evaluations of performance as a function of author's name. Sex Roles, 12(3,4), 353-61.

Pezzullo, T. & Brittingham, B. (1979). Salary Equity: Detecting Sex Bias Among College and University Professors. Lexington, MA: D.C. Heath.

Pounder, D.G. (1988). The male/female salary differential for school administrators: Implications for career patterns and placement of women. Educational Administration Quarterly, 4(1), 5-19.

Sandler, B.R. (1986). The Campus Climate Revisited: Chilly for Women Faculty, Administrators, and Graduate Students. Washington, DC: Project on the Status and Education of Women, Association of American Colleges.

Sawhill, I.V. (1973). The economics of discrimination against women: Some new findings. Journal of Human Resources, 8,383-96.

Simon, R.J., Clark, S.M., & Galway, K. (1975). Women Ph.D.'s: A recent profile. In M. Medmick, S. Tangri, & L. Hoffman (Eds.), Women and Achievement. New York: Wiley.

Stone, J.A. (1985). Determinants of administrators' salaries in public schools. Economics of Education Review, 4(2), 105-109.

Theilens, W., Jr., (1984). Women Professors and Lecturing. A paper presented at the International Conference on Improving University Teaching, July, 1984.

Tolbert, P.S. (1986). Organizations and inequality: Sources of earnings differences between male and female faculty. Sociology of Education, 59(October), 227-35.

U.S. Dept. of Commerce. (1985). Bureau of the Census. Current Population Reports. Washington, DC: Government Printing Office.

U.S. Department of Labor. (1982). Bureau of Labor Statistics, NEWS, (USDL 82-86; USDL 82-277). Washington, DC: Government Printing Office.

Table 1. Correlation Matrix for all variables. * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Gender	--														
2. Academic Rank	.257***	--													
3. Tenure Status	.201***	.562***	--												
4. Administrative Appointment	.083*	.126**	.100*	--											
5. Experience as Professor	.296***	.456***	.506***	.137**	--										
6. Institution Type	-.016	-.050	.050	-.025	.038	--									
7. Teaching Load	.006	-.012	-.041	-.270***	-.015	-.287***	--								
8. % Time Teaching/ advising	.039	-.002	-.017	-.297***	.066	-.341***	.486***	--							
9. No. Graduate Committees served on	.067	.080*	.097*	.049	.081*	.179***	-.018	-.027	--						
10. # days/mo. Service	-.043	-.056	-.002	.097*	-.078*	-.045	-.024	-.029	-.068	--					
11. % Time Service	.025	.081*	.028	.502***	.032	.031	-.384***	-.627***	.001	.045	--				
12. % Time Research	-.092*	-.060	.012	-.198***	-.111**	.422***	-.103*	-.405***	.064	.013	-.272***	--			
13. Books	.068	.121**	.059	.006	.043	.036	-.024	-.113**	.060	.080*	.016	.043	--		
14. Articles	-.038	.051	-.014	-.070	-.128**	.134**	-.060	-.224***	.013	.022	-.024	.302***	.095*	--	
15. Salary	.268***	.337***	.295***	.346***	.264***	.164***	-.196***	-.243***	.074	.062	.248***	-.006	.121**	.018	--

Table 2A. Numbers (%) of male and female assistant and associate professors grouped by salary level.

	Salary									
Gender	Less than $20,000	20,000-24,999	25,000-29,999	30,000-34,999	35,000-39,999	40,000-44,999	45,000-49,999	50,000-54,999	55,000 and more	Total[a]
Male	3(0.8%)	21(5.4%)	69(17.7%)	108(27.8%)	102(26.2%)	48(12.3%)	18(4.6%)	10(2.6%)	10(2.6%)	389(100%)
Female	-	17(18.1%)	38(40.4%)	23(24.5%)	10(10.6%)	4(4.3%)	-	1(1.1%)	1(1.1%)	94(100%)

[a] missing observations = 5

Table 2B. Numbers(%) of male and female assistant professors grouped by salary level.

	Salary									
Gender	Less than $20,000	20,000-24,999	25,000-29,999	30,000-34,999	35,000-39,999	40,000-44,999	45,000-49,999	50,000-54,999	55,000 and more	Total[a]
Male	1(1.2%)	15(17.6%)	24(28.2%)	24(28.2%)	11(12.9%)	6(7.1%)	1(1.2%)	2(2.4%)	1(1.2%)	85(100%)
Female	-	15(31.3%)	24(50.0%)	5(10.4%)	3(6.3%)	-	-	-	1(2.1%)	48(100%)

[a] missing observations = 2

Table 3A. Forward regression of salary for assistant and associate professors

Variable	df	B	Standard Error of B	Beta	T	p
Administrative appointment	1	0.456	0.071	0.262	6.375	0.0000
Academic rank	1	0.701	0.164	0.203	4.280	0.0000
Institution type	1	0.238	0.072	0.136	3.286	0.0011
Gender	1	0.700	0.156	0.179	4.479	0.0000
% Time teaching/ advising	1	-0.009	0.003	-0.123	-2.849	0.0046
Tenure status	1	0.339	0.145	0.110	2.342	0.0196
(Constant)		0.721	0.624	-	1.155	0.2485

Multiple R = 0.540 $F[6,481] = 32.995$ $p < 0.0001$

$R^2 = 0.292$

Adjusted $R^2 = 0.283$

Table 3B. Forward regression of study for assistant professors.

Variable	df	B	Standard Error of B	Beta	T	p
Experience as professor	1	0.069	0.025	0.221	2.719	0.0075
Teaching load	1	-0.121	0.041	-0.234	-2.928	0.0040
Gender	1	0.654	0.241	0.219	2.708	0.0077
(Constant)		3.640	0.370	-	9.828	0.0000

Multiple R = 0.423 $F[3,131] = 9.492$ $p < 0.0001$

$R^2 = 0.179$

Adjusted $R^2 = 0.160$

Table 4A. Incremental "Cluster" Regression of salary for assistant and associate professors.

Source	Cluster	df	Sum of Squares	R^2 Change	F	p
Experience/ Job Status	1	3	82.554	0.071	16.059	0.0000
Administrative responsibility	2	1	46.516	0.040	27.145	0.0000
Institution type	3	1	17.795	0.015	10.385	0.0014
Teaching	4a	2	7.746	0.007	2.260	0.1054
Service	4b	3	4.204	0.004	0.818	0.4845
Research	4c	3	5.127	0.004	0.997	0.3938
Gender	5	1	29.153	0.025	17.013	0.0000

Multiple R = 0.549 F = [14,473] = 14.611 $p < 0.0001$

R^2 = 0.302

Adjusted R^2 = 0.281

Table 4B. Incremental "Cluster" regression of salary for assistant professors

Source	Cluster	df	Sum of Square	R^2Change	F	p
Experience/ Job Status	1	2	9.860	0.036	2.813	0.0639
Administrative responsibility	2	1	1.606	0.006	0.916	0.3403
Institution type	3	1	2.052	0.007	1.171	0.2814
Teaching	4a	2	7.200	0.026	2.053	0.1328
Service	4b	3	6.310	0.023	1.200	0.3127
Research	4c	3	1.738	0.006	0.331	0.8033
Gender	5	1	11.265	0.041	6.428	0.0125

Multiple R = 0.479 F[13,121] = 2.772 p = 0.0017

R^2 = 0.229

Adjusted R^2 = 0.147